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MR. JOHN MILNE has recently advocated an earthquake survey of the world. He states that for \$5,000 twenty observatories willing to co-operate can be provided with the necessary instruments, and calls attention to the important theoretical and practical problems that can thus be solved. One of the recent earthquakes in Japan was recorded about 16 minutes after its occurrence in Mr. Milne's observatory on the Isle of Wight, and showed that there had been an error in telegraphic transmission to the newspapers of two days, whilst another gave an accurate account of a catastrophe the details of which were not known until mails arrived some three weeks later. An absence of records from the Isle of Wight seismographs has on more than one occasion shown that telegrams have exaggerated seismic effects, and in one instance at least—referring to a recently reported disaster in Kobe—indicated that the sender, regardless of the alarm he might create, was without foundation for his widely-published message. The immediate benefits derived by observatories at which instruments were installed, over and above the speedy announcement of great catastrophes in distant places, would be that the records of earth movements would throw light upon some of the otherwise unaccountable deflections shown in diagrams from magnetographs, barographs and other instruments sensible to slight displacements, whilst diurnal and other changes in level affecting astronomical observations would be continuously recorded.

MR. BENNETT, who is acting as British Consul-General at Galatz, has prepared, says the *London Times*, a report on the petroleum industry in Rumania, where, he thinks, it is likely to play an important part in future commercial development. Petroleum exists in abundance in Rumania, in the zone stretching from Turn-Severin, on the western frontier, along the foot of the Carpathians, towards Bukowina and Galicia. It is found throughout the whole of this region, but especially in the Olt, Dimbovitza, Prahova, Buzeu and Tazlan valleys. It is said also to be found in the whole of the plains down to the Danube. There are about fifty borings and eight hundred wells dug by hand in the five districts above mentioned; but these are all shallow, and

the output in 1894-95 reached 800,000 tons. Although petroleum has been worked in Rumania for 25 years, the industry is evidently in its infancy still. The greater part of the land is owned by the state and large holders who reside in the towns and will not invest money in industrial enterprise; grain has monopolized the energy and capital of the Rumanians, and the forests and mineral wealth of the country are neglected. Thus it was not until 1895 that a mining law was passed, and up to that date the ownership of land below the surface had never been determined. Nor is there a body of native mining engineers. About a third of the crude oil is taken from the wells of four firms, while the remainder comes from the workings of numerous small proprietors, who have not the capital necessary for proper development of the deposits.

UNIVERSITY AND EDUCATIONAL NEWS.

THE Johns Hopkins University has published the twenty-first annual report of President Gilman. The report itself, presented to the trustees on November 21st, extends to sixteen pages only, but there are two appendices. One of these contains the reports on the chief branches of study prepared by the principal instructors in the several departments, together with statements regarding the library, the press, the State Weather Service, The State Geological Survey and the marine laboratory. In conclusion there is given an interesting retrospect of the twenty years now completed by the University. The important service performed by the Johns Hopkins University for education and science in America is adequately witnessed by the fact that nearly half of its students have become teachers. The following institutions have on their staff more than ten students from the University: Johns Hopkins University (67), Chicago (23), Wisconsin (19), Bryn Mawr (18), Leland Stanford, Jr. (17), Michigan (17), Pennsylvania (16), Cornell (14), Columbia (13), Massachusetts Institute of Technology (11), Nebraska (11), Northwestern (11), Harvard (10), Woman's College of Baltimore (10).

THE faculty of the Massachusetts Institute of

Technology, on January 13th, elected Professor James M. Crafts, of the chemistry department, chairman *pro tem.* of the faculty, pending the election of a successor to the late Gen. F. A. Walker as President.

MR. G. A. HOBART, Vice-President elect, has given \$5,000 to Rutgers, of which he is a graduate.

DISCUSSION AND CORRESPONDENCE.

A NATIONAL DEPARTMENT OF SCIENCE.

TO THE EDITOR OF SCIENCE: I have just seen in the current number of SCIENCE Dr. Dabney's discussion of this subject, and, feeling that the natural inferences most persons unacquainted with government work would draw from it, must be not only inaccurate but mischievous, I feel obliged to point out that there are at least two sides to the question, and it is extremely doubtful whether the establishment of such a department would be beneficial to science, economical or efficient to a degree warranting the change.

With much that Dr. Dabney has written I am in accord; it is his conclusions, and the inferences to be drawn from his manner of presenting the facts, that demand further examination.

It is nothing new for people to assume that the proposal of a new set of well chosen names, a new classification of well known facts, or a cleverly drawn scheme of organization of previously distinct agencies, has in itself added something to knowledge, or possesses an inherent power of some undefined sort to make things easier, cheaper or better. Such assumptions are at the basis of nearly all cranky theories, as well as occasional good ones. No scientific man should accept such hypotheses without a thorough investigation of the facts.

I take it that the object of a scientific bureau is to gather, digest and disseminate facts in regard to matters with which it is officially charged. If this work is done promptly, efficiently and accurately, at a reasonable cost, the bureau justifies its existence, and not otherwise. It is of no consequence, whatever, to the bureau and its work whether it is attached to one department or another, or to none, if the bureau is conducted by a competent person on scientific principles, and with a view simply to getting

the best possible results. The origin and success of our scientific bureaus has been due, as Dr. Dabney points out, to the fact that they are, in the main, the crystallized result of individual effort exerted in a particular field and with the object of attaining certain definite ends.

The men to whom we owe our best scientific agencies under government, worked, and often gave their lives prematurely, not to get offices, or titles, or salaries, or to add a new name to the lists of bureaus in the blue books, but to promote research and benefit the nation by its results. This, too, has been the object of their successors in conscientious devotion. The danger and difficulty which has threatened the bureaus, and never more than at the present time, has been the intrusion of politics or personal interest in appointments, and the stifling of individual initiative by an excess of red tape, imposed generally in good faith by Congress with the idea of preventing abuses.

From Dr. Dabney's account it might be supposed that a number of bureaus were, to a greater or less extent, duplicating each other's work, and the inference is direct from his argument that this duplication might and should be prevented by a consolidation of the various bureaus. The supposition is, I believe, quite erroneous and the inference wholly fallacious.

The bureaus exist to do work, and the advisability of any change in organization must be measured by its capacity for increasing results, improving efficiency, and promoting economy without lessening the product measured in results. If consolidation would diminish results, impair efficiency, and do away with individual responsibility to any marked degree, it would be dearly bought. That this would be the case, under present conditions, there can be hardly any doubt; and the coolness with which the proposition, which is by no means new, has been met in Congress is, I am convinced, due to the fact that the more influential members, as good business men, recognize that the hypothesis is without the essentials of a workable scheme.

At present most of the bureaus are attached to some department. The head of that department has many divisions to supervise. In general, even if not specially interested in science